REMARKS

The Office Action mailed on April 3, 2006 has been carefully considered and the Examiner's remarks are appreciated. The Examiner withdrew the allowability of claims 1-9, 11, 13-21, and 23 based on newly cited references. In response to the Office Action, Applicants respectfully request reconsideration of the rejected claims in view of the following remarks.

Discussion of Rejections under 35 USC §103(a)

In the Office Action, the Examiner rejected claims 1-9, 11, 13-21 and 23 under 35 U.S.C. 103(a). In particular independent claim 1 was rejected as being unpatentable over U.S. Pat. No. 6,572,744 to Paranjpre et al ("Paranjpre") in view of U.S. Pat. No. 5,810,982 to Sellers. And independent claim 13 was rejected as being unpatentable over Paranjpe in view of Sellers, and further in view of U.S. Pat. No. 5,525,199 to Scobey. Applicants respectfully submit, however, that the rejections are inappropriate since the cited references do not teach or suggest all claim limitations as required by MPEP §2143.03.

Regarding independent claim 1, Applicants respectfully submit that neither Paranjpe or Sellers teach the limitation, *"means for providing a reactant gas at said target to form said sputtered particles,..."* A key difference between the present invention versus Paranjpe/Sellers is that in the present invention the reactant gas itself is used to impinge the target and thereby produce/form the sputtered target particles. Because the reactant gas has this important impinging functionality, it must be

provided at the target and not elsewhere in the chamber. Support for this distinction is found on page 11, paragraph 20 of the Specification as follows in part:

> *" **[0020]** A reactant gas source 15 is also shown provided in Figure 1 which supplies a reactant gas, such as oxygen or nitrogen gas, via a reactant gas supply line 16 to the target surface of the magnetron 12. The reactant gas may be used alone (as shown in Figure 1) for bombarding the target source to emit sputtered target particles."*

Support is also found in the drawings. Figure 1 in particular shows providing only a reactant gas (and not an inert gas) to the magnetron 12 so as to emit sputtered particles.

In contrast, what is well known in the prior art of conventional reactive sputtering techniques, is the introduction of a reactant gas to combine with emitted/sputtered target particles, but do not themselves cause or produce the sputtering. Sellers is typical in this respect by using a noble gas, e.g. argon to cause sputtering of target particles (see column 5, lines 27-45). Even independent claim 1 of Sellers states that only the noble gas ions operate to impinge the target, as follows in part:

> *"a main dc sputtering power source configured as a current supply providing to said target continuous dc sputtering power at a predetermined negative voltage level that causes noble gas ions in said chamber to impinge upon said target with sufficient energy to free atoms of said target material from said target such that the free atoms react with said reactive gas to form said compound"* (emphasis added).

And as shown in Figure 12 of Sellers, the reactant gas is simply introduced into the chamber to combine with the sputtered target particles produced by the noble gas.

But Figure 12 does not show the reactant gas being directed towards or otherwise provided at the target to cause the sputtering of target particles. Nor is there any suggestion to that effect. Even in the Xiong reference, the reactive gas is not used for impinging the target for sputtering target particles.

Regarding independent claim 13, Applicants respectfully submit that Paranjpe, Sellers, or Scobey do not teach the limitation, *"impinging said target source with a reactant gas to sputter said particles onto said substrate..."* for similar reasons to those discussed for claim 1. Since the reactant gas itself is used to impinge and thereby produce the sputtered particles, it must be provided at the target and not elsewhere in the chamber as is shown in Sellers. The Examiner has apparently overlooked this limitation because his support for rejecting claim 13 only states that Sellers teaches providing a means for providing reactant gas at the target source, without addressing the impinging operation performed by the reactant gas. In fact, column 9, lines 62-65 cited by the Examiner states nothing more than that the reactive gas e.g. oxygen is delivered through a reactive gas conduit 20.

Applicants respectfully submit, therefore, that the use of the reactant gas at said target source to form the sputtered particles is not disclosed, taught, or suggested by either references, and therefore the 103-based rejections of independent claims 1 and 13 are inappropriate. Additionally, the rejections to claims 2-9, 11, 14-21, and 23 are also inappropriate as being dependent on an allowable claim.

Summary

Applicant respectfully submits that claims 1-9, 11, 13-21, and 23 are in condition for allowance, and respectfully request allowance of the same. In the event that the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, he is respectfully requested to initiate the same with the undersigned at (925) 422-7274.

Respectfully submitted,

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